

THE OFFICE ACTION

In the final Office Action issued on December 22, 2005, the Examiner objected to the affidavit as being insufficient to overcome the references. The Examiner objected to claim 44 as containing an informality in the phosphor formulation. The Examiner rejected **claims 1-45** under 35 U.S.C. §112, first paragraph, as allegedly containing new matter.

The Examiner rejected **claims 1-3, 6, 7, 8, 12 and 13** under 35 U.S.C. §103(a) as being unpatentable over WO 03/080763 to Juestel ("Juestel") in view of JP 11-261105 to Sugawara et al. ("Sugawara"). The Examiner also rejected **claims 14-16, 19-21, and 26** under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Sugawara and further in view of U.S. Patent Application Publication Nos. 2003/0155856 to Shiiki et al. ("Shiiki") and 2002/0174794 to Lowden et al. ("Lowden"). The Examiner also rejected **claim 17** under 35 U.S.C. §103(a) as being unpatentable over Juestel, Sugawara, Shiiki, and Lowden and further in view of U.S. Patent No. 6,515,417 to Duggal et al. ("Duggal"). The Examiner further rejected **claims 1-3** under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,621,211 to Srivastava et al. ("Srivastava") in view of Sugawara. The Examiner rejected **claim 4** under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. in view of Sugawara et al. and further in view of Duggal et al. **Claim 5** was rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. and Sugawara et al. and further in view of U.S. Patent Application Publication No. 2001/0000622 A1 to Reeh et al. ("Reeh"). The Examiner also rejected **claim 18** under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. and Sugawara et al. and further in view of Reeh et al. **Claims 27, 28, 38 and 39** were rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Srivastava et al. in view of Sugawara et al. The Examiner further rejected **claims 32-34** under 35 U.S.C. 103(a) as being unpatentable over Srivastava et al. and Sugawara et al. and further in view of Juestel et al. The Examiner also rejected **claims 30** under 35 U.S.C. 103(a) as being unpatentable over Srivastava et al. and Sugawara et al. and further in view of Duggal et al. **Claim 31** was rejected under 35 U.S.C. 103(a) by the Examiner as being unpatentable over Srivastava et al. and Sugawara et al. and further in view of Reeh et al. The Examiner further rejected **claims 40 and 43** under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. in view of U.S. Patent

Application Publication No. 2003/0209705 A1 to Emerson et al. ("Emerson").

Claims 1-45 are pending in the application.

REMARKS

Amendments have been made to the claims to address the Examiner's objections to these. In light of these amendments and the following comments, Applicants respectfully request withdrawal of all rejections.

A. The Declaration is Sufficient to Establish Invention

The Examiner has rejected the sufficiency of the prior submitted §1.131 declaration because Exhibit A did not contain a date and because the limitation a semiconductor light source emitting radiation in the range of from 250-450 nm was allegedly not supported by the Exhibit.

Applicants are completely confused by the Examiner's rejection of this declaration and accompanying Exhibit. First, with regard to the lack of a date on the Exhibit, Applicants would like to point out that the dates on the Exhibit have been redacted, as pointed out in the response and declaration. The redaction of dates from an invention disclosure submitted as evidence of conception and reduction to practice is conventionally done since this material becomes public record. The MPEP, as detailed in §715.07 (subheading: Establishment of Dates) notes this is acceptable practice and states that if the dates have been removed, the declarant may merely allege that the acts referred to occurred prior to a specified date. This was done in section 6 of the declaration. Applicants request withdrawal of this objection.

Second, and with respect to the Examiner's assertion that no support for the semiconductor emission ranges is found, Applicants respectfully disagree. Specifically, Exhibit A states that the claimed phosphor can be used to make white LED's using blue or UV LEDs as the excitation source. It is well known that the emission range of from 250-450 nm ranges from UV to blue emissions. In addition, the Exhibit specifically mentions LED's having emission peak from 370 to 405 nm as well as noting that the phosphor has significant absorption at 450 nm, indicating such LED's could also be used to make white light devices. Furthermore, it is known that a §1.131 affidavit or declaration is not insufficient merely because it does not show the identical subject matter of that which is claimed. Such evidence is sufficient because

"Applicant's possession of what is shown carries with it possession of variations and adaptations which would have been obvious, at the same time, to one of ordinary skill in the art." MPEP §715.02. In light of this, withdrawal of this rejection of the declaration as being insufficient is respectfully requested.

The Examiner's statements under (C), (D), (E) and (F) are confusing and not well taken. Applicants submit that the declaration and accompanying Exhibit clearly show, at least inherently, the subject matter of these claims. Even assuming that it did not, Applicants only need to show support the independent claims in the declaration. By definition, if the independent claims are patentable over a cited reference, the independent claims are also patentable thereover. Thus, if Srivastava is not a valid reference for the independent claim, any dependent claims are also therefore patentable over Srivastava, regardless of whether support for the claimed limitations is found in the declaration.

B. The Claims Satisfy §112

The Examiner rejected claims 1-45 under §112 as failing to comply with the written description requirement. Specifically, the Examiner rejected claims 1-45 as reciting a semiconductor light source emitting radiation in the range of from 250-450 nm. The Examiner rejected claim 44 because the specification allegedly does not support a claim to all four phosphors together. The Examiner also rejected claim 45 as not teaching a light source emitting at 405 nm.

First with respect to independent claims 1 and 14, the claims have been amended to recite that the light source emits a peak radiation from 250-405 nm. Original claim 1 recited a range of from 250 to 500 nm. Applicants have merely narrowed the range to which they originally claimed. Applicants are well within their rights to narrow the scope of their claims. Such a narrowing does not implicate §112, as the broader disclosure inherently satisfies the written description for the narrower range. A specific value of 405 nm has been shown to be particularly beneficial, as shown in the Examples section of the specification.

With regard to claim 27, the claimed emission range has been changed to from 370 to 405 nm. Again, the same argument as detailed above applies. The original claim recited 370 to 500. Applicants are well within their rights to narrow the scope of their claims. The specific value of 405 nm has been shown by the Examples to be beneficial. Withdrawal of this rejection is requested.

With regard to the Examiner's rejection of claim 44, Applicants are again at a loss as to what the Examiner specifically objects to. All three of the phosphors blended with the $(\text{Sr}, \text{Ba}, \text{Ca})_2\text{SiO}_4:\text{Eu}$ phosphor are listed in the list that starts on page 11 of the specification. The specification states that other phosphors may be used to create the white light devices, including those claimed. Sufficient support thus exists for claiming specific phosphors from this list to include in a white light device. With regard to claim 45, support for a 405 nm emitting chip is found in the Examples, which state that a 405 nm chip is used. Withdrawal of these rejections is requested.

C. The Claims are Patentable Over Juestel in View of Sugawara

The Examiner rejected claims 1-3, 6, 7, 8, 12 and 13 under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Sugawara. Applicants respectfully traverse.

As amended, claim 1 now recites that the semiconductor light source has a peak emission below 405 nm. As mentioned by the Examiner, Juestel discloses a blue emitting LED having peak emission of from 450-480 nm. Likewise, Sugawara discloses a blue or green emitting semiconductor having a peak emission at about 450 nm (see abstract and paragraph 7). The Examiner will appreciate that even a recitation of "about 450 nm" in Juestel does not extend to 405 nm or below.

Thus, even assuming that it is appropriate to combine the teachings of Juestel and Sugawara, such a combination fails to disclose or suggest a device including a UV emitting semiconductor and the recited elements. Applicants request withdrawal of this rejection.

D. The Claims are Patentable Over Juestel in View of Sugawara, Shiiki and Lowden

The Examiner rejected claims 14-16, 19-21 and 26 under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Sugawara, Shiiki and Lowden. Applicants respectfully traverse.

Claim 14 recites that the semiconductor light source is a UV emitting source has a peak emission in the range 370-405 nm. As noted above, Juestel discloses a blue emitting LED having peak emission of from 450-480 nm. Likewise, Sugawara discloses a blue or green emitting semiconductor having a peak emission at about

450 nm (see abstract and paragraph 7). The reasons why the proposed combination of Sugawara and Juestel do not render the present claims unpatentable is presented above.

The addition of Shiiki and Lowden to the proposed combination does not cure the deficiency. That is, Shiiki and Lowden are cited for the recitation of a fluorogermanate (specifically $\text{Mg}_4\text{FGeO}_6\text{:Mn}$) as a red emitting phosphor in LED devices. Even assuming the propriety of combining this teaching with the disclosure of Juestel and Sugawara, such a combination would still not disclose all of the elements of the present claims.

The Examiner's reasoning (page 6, 3rd paragraph of the Office Action) as to why Juestel inherently teaches a UV light source is confusing and incorrect at best, and disingenuous at worst. Juestel does not teach a UV light source and in fact actually teaches against the use of such a light source. Specifically, Juestel discloses that "It has been found that color rendering can decrease at excitation energies below 450 nm" (page 6, lines 10-11). Thus, not only does Juestel not disclose or suggest the use of a semiconductor having a peak emission in the range below 450 nm, it teaches away from the combination with any other reference disclosing such a light source, as it would detrimentally affect the color rendering of the resulting light. The Examiner's attempted argument to equate the blue LED of Juestel with the lower wavelength light source of the present claims is clearly improper and merely an attempt to stretch the disclosure of Juestel to meet the limitations of the present claims.

Based on the above, Applicants respectfully request withdrawal of this rejection.

E. The Claims are Patentable Over Juestel in View of Sugawara, Shiiki, Lowden and Duggal

The Examiner rejected claim 17 under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Sugawara, Shiiki, Lowden and Duggal. Applicants respectfully traverse.

The reasons why the combination of Juestel in view of Sugawara, Shiiki, and Lowden fails to render claim 14 unpatentable is set forth above. Claim 17 depends from claim 14 and thus contains all the limitations thereof.

The Examiner cites Duggal as teaching an organic emission structure. Even

assuming this to be true and even assuming the propriety of combining Duggal with the other references, such a combination would still not disclose or suggest all of the limitations of the parent claim 14, and thus claim 17. Based on this, Applicants respectfully request withdrawal of this rejection.

F. The Claims are Patentable Over Juestel in View of Sugawara and Duggal

The Examiner rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Sugawara, and Duggal. Applicants respectfully traverse.

The reason why the combination of Juestel in view of Sugawara fails to render claim 1 unpatentable is set forth above. Claim 4 depends from claim 1 and thus contains all the limitations thereof.

The Examiner cites Duggal as teaching an organic emission structure. Even assuming this to be true and even assuming the propriety of combining Duggal with the other references, such a combination would still not disclose or suggest all of the limitations of parent claim 4. Based on this, Applicants respectfully request withdrawal of this rejection.

G. The Claims are Patentable Over Juestel in View of Sugawara and Reeh

The Examiner rejected claims 5 and 18 under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Sugawara, and Reeh. Applicants respectfully traverse.

The reason why the combination of Juestel in view of Sugawara fails to render claims 1 and 14 unpatentable is set forth above. Claims 5 and 18 depend from claims 1 and 14, respectively, and thus contains all the limitations thereof.

The Examiner cites Reeh as teaching coating the phosphor on the surface of the light source. Even assuming this to be true and even assuming the propriety of combining Reeh with Juestel and Sugawara, such a combination would still not disclose or suggest all of the limitations of claims 5 and 18. Based on this, Applicants respectfully request withdrawal of this rejection.

H. Srivastava is not a Valid Prior Art Reference

The Examiner made a number of rejections based on Srivastava in combination with one or more references (numbered sections 5, 9-12). Applicants

respectfully traverse based on the fact that Srivastava is not a valid prior art reference.

Srivastava was filed on May 15, 2000 and was published Sept 16, 2003, which is less than one year prior to the filing date of the present application, March 10, 2004.

Previously submitted was a 37 C.F.R. §1.131 declaration of one of the inventors of the present invention. The declaration was submitted to evidence a date of conception and reduction to practice of the present invention in the United States prior to the publication date of Srivastava, September 16, 2003. Because the present invention was conceived and reduced to practice prior to the publication date of Srivastava, Srivastava therefore cannot qualify as prior art under §102(a) and can only qualify as prior art under § 102(e).

To remove Srivastava as a §102(e) reference, Applicants previously asserted and continue to assert that the present application and Srivastava, at the time the invention of the present application was made, were owned by the same person or subject to an obligation of assignment. The claimed invention was made by or on behalf of parties to a joint research agreement that was in effect on or before the date the claimed invention was made, the claimed invention was made as a result of activities undertaken within the scope of the joint research agreement, and the application for patent for the claimed invention discloses the names of the parties to the joint research agreement. According to § 103(c), Srivastava shall not preclude patentability of the subject application. Applicants respectfully request that the Examiner remove the claim rejections and allow the application to issue.

Since the Examiner cannot properly apply Srivastava to any of the claims pending in the application, Applicants will not respond to any arguments raised by the Examiner using Srivastava in rejecting the claims. The lack of response should not be taken as an admission to the validity of any of the arguments presented by the Examiner.

I. The Claims are Patentable Over Juestel in View of Emerson and Nose

The Examiner rejected claims 40 and 43 under 35 U.S.C. §103(a) as being unpatentable over Juestel in view of Emerson and Nose. Applicants respectfully traverse.

First, there is no motivation to combine these references. As detailed above,

Juestel discloses the use of a blue emitting LED. As noted above, Juestel does not teach a light source having a peak emission down to 405 nm and in fact actually teaches against the use of such a light source. Specifically, Juestel discloses that "It has been found that color rendering can decrease at excitation energies below 450 nm" (page 6, lines 10-11). Thus, not only does Juestel not disclose or suggest the use of a semiconductor having a peak emission in the claimed range, it teaches away from the combination with any other reference disclosing such a light source, as it would detrimentally affect the color rendering of the resulting light.

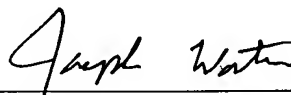
Accordingly, it would not have been obvious to "replace the LED dominant in blue in Juestel et al. by a UV LED", despite the Examiner's statements to the contrary. Thus, it would not be obvious to combine Emerson with Juestel. As such, it would also not be obvious to combine a third, blue phosphor in Juestel, as blue emission is already provided by the blue LED. Thus, there is no motivation to combine Nose with Juestel.

CONCLUSION

It is respectfully submitted that the subject application is now in better condition for examination.

Respectfully submitted,

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